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Removing the radical and making all necessary reductions we finally get

$$(a^4+b^4+c^4-a^2b^2-a^2c^2-b^2c^2)x^4-(a^2+b^2+c^2)m^2x^2=-m^4.$$

Also solved by **M. A. Harding, H. Prime, C. N. Schmall, and H. C. Feemster.**

NOTES AND NEWS.

About 130 pages of the part of the French mathematical encyclopedia which was issued in June, 1912, are devoted to contemporary researches on the theory of functions. The three main subjects treated are the theory of concrete sets of points, the theories of integration and of finding derivatives, and the development into series. As regards the theory of sets of points, it is observed on page 115 that, in a very general way, it might be said that the German and English writers devote most attention to the abstract theory of sets of points, while the French writers lay most stress on the applications of this subject in the theory of functions. M.

Alfred Ackermann-Teubner has given twenty thousand marks — about five thousand dollars — to the University of Leipzig, to establish a *mathematical prize.* The first award is to be made in 1914, and every two years thereafter until the surplus accumulations amount to sixty thousand marks. After this time the prize is to be awarded annually. The subjects for which the prize after 1914 is to be awarded are, in order, as follows:

1. History, philosophy, and teaching;
2. Mathematics, especially arithmetic and algebra;
3. Mechanics;
4. Mathematical physics;
5. Mathematics, especially analysis;
6. Astronomy and theory of errors;
7. Mathematics, especially geometry;
8. Applied mathematics, especially geodesy and geophysics.

The range of the subject matter is to be about that given in the large German mathematical encyclopedia, which is now being published by B. G. Teubner of Leipzig, Germany. M.

In the "Summary Report" on the teaching of mathematics in Japan, which was recently published, there is given, page 197, a list of third year courses in mathematics in the Tokio Imperial University. This is of interest as it indicates how advanced their higher courses in mathematics really are. Four courses, bearing the following general headings, — General Theory of functions, Theory of differential equations, Theory of numbers and algebra, Higher geometry, — are outlined as follows: Riemann's surface and its connectivity, analysis situs, elliptic integrals, theory of invariants and covariants, Hermite's transformation, Jacobi's principle of transformation, numerical evaluation of the elliptic integral, Abel's theorem and its applications, transformation of theta-functions, Fuchs' theory of linear differential equations, Gauss' differential equations, integration of partial differential equations, Weierstrass' method of the calculus of variation, introduction to integral equations, theory of groups of finite order, Galois' theory of equations, select chapters from higher arithmetic and algebra, one or two of the different kinds of geometries, such as differential geometry, non-euclidean geometry, descriptive geometry, etc. These advanced courses throw considerable light on their elementary work in mathematics. M.

The July number of the *Mathematical Gazette*, containing portraits of the prominent living Cambridge mathematicians, Darwin, Larmor, Hobson, and Love, commences with an article by the well known writer on mathematical history, W. W. R. Ball. The article is entitled "The Cambridge School of Mathematics," and it divides the history of this school into six periods, viz., the mediaeval, the renaissance, the Newtonian, the eighteenth century, the nineteenth century, and the present period. It may be remembered that W. W. R. Ball wrote a book of 264 pages on "Mathematics at Cambridge" in 1889, and hence it may be assumed that he is especially well prepared to write an article on this subject. As the closing paragraph seems to be of especial interest, we quote it: "In this article I have not unnaturally avoided mentioning the work of those who fortunately are with us today, and for similar reasons I do not propose to say anything about the progress of the school in the opening years of the twentieth century. The reconstruction in 1909 of the Tripos, and the destruction of many of the distinctive features of the former scheme *must profoundly modify the future history* of Mathematics at Cambridge, and perhaps the long continued efforts to bring students into closer touch with professors and lecturers may be at last crowned with success. The change in the Tripos regulations has been accompanied by a curious alteration in the popular subjects, and today but few of the young graduates who desired the change are interesting themselves in those branches of applied mathematics once so generally studied, but rather are turning their attention to subjects like the theories of *functions* and *groups*. It is too early to say whether this is only a passing movement." M.

The Summer meeting of the American Mathematical Society was held at the University of Pennsylvania on September 10-12. An extended program of papers occupied the sessions for two days, and an excursion to the historic points of interest added to the general enjoyment of the members present. S.

The number of American representatives who attended the International Congress at Cambridge, England, was most gratifying, being greater than that of any other country except Great Britain. The number was eighty, Germany and France coming next with seventy and fifty-two, respectively. The University of Illinois and the University of Chicago had five representatives each. S.

The International Commission on the Teaching of Mathematics made its report at the Fifth International Congress of Mathematicians at Cambridge, England, in August. Reports were received from eighteen countries, and 150 separate reports were submitted. About fifty more are now in process of preparation, and others are contemplated by various countries. The Central Committee, consisting of Professor Klein (Göttingen), Sir George Greenhill (London), and Professor H. Fehr (Geneva), with Professor David Eugene Smith (New York) added, was continued in office for another period of four years. The American reports have been completed and may be obtained gratis by application to the Bureau of Education, Washington, D. C. It is probable that one or more reports, summarizing the large features of the reports of all other countries, will be prepared by the American Commission during the next four years, and that certain other special lines of work will be undertaken. The Central Committee contemplates holding three international conferences on teaching, the first in France in 1914, the second in Germany in 1915, and the third, with the next Congress, in Stockholm in 1916. A more extended report will be given in the next issue. S.

The *Bulletin* of the American Mathematical Society announces the following promotions and appointments: Professor R. D. Carmichael of the University of Indiana, has been promoted to an associate professorship of mathematics; Dr. E. W. Sheldon has been promoted to a professorship of mathematics in the University of Alberta; Dr. E. T. Bell of Columbia University, has been appointed instructor in mathematics at the University of Washington; Mr. R. B. Stone has been appointed instructor in mathematics at Purdue University; Dr. W. M. Smith of Lafayette College, has been appointed assistant professor of mathematics in the University of Oregon; Dr. R. G. D. Richardson has been promoted to an associate professorship at Brown University; and Mr. E. P. R. Duval of Princeton University, has been appointed assistant professor of mathematics in the University of Kansas. F.

This issue was mailed five weeks late, party due to the fact that Professer Marshall failed to receive the proof for his article, which was sent to him by mail in September. After more than a month, the proof was returned unclaimed.